

INTERIOR ENCLOSURES

WHEN TO CONSIDER

NEEDS ASSESSMENT	NO	SCHEMATIC DESIGN	YES
MASTER PLANNING	NO	DESIGN DEVELOPMENT	YES
PROJECT STATEMENT	MAYBE	CONSTRUCTION	
ARCHITECTURAL		DOCUMENTS	DONE
PROGRAMMING	YES	CONSTRUCTION	DONE
NO-Need not consider.			
MAYBE-This system may be considered.			
YES-This system should be considered.			
DONE-This system should have already been considered.			

DESCRIPTION

What materials you use for the interior walls of your new facility will play an important part in determining the durability, security and first cost of your project. Many options, each with a range of costs, are available. In general, the more secure and durable the construction of the wall, the more it will cost. As emphasized throughout this Handbook, the key to controlling your spending for this system is to select the appropriate wall system for the appropriate use. Do not use the expensive wall system selected for your high security areas in low or nonsecure areas.

Look at each wall. Consider its purpose, how long unsupervised inmates will be in that area, what types of inmates will be detained there, and where the inmates will go if they go through the wall. Remember, a typical masonry wall without the extra reinforcing and grout is still a substantial barrier in a location where unsupervised inmates are not detained for a long time. Also, always consider the total wall system the security wall is being used for. If you have glazed openings in a wall or some other material which is less secure, then additional money spent on part of the wall is not a prudent use of your resources.

RELATIONSHIP TO OTHER SYSTEMS

As stated in the structural systems of the Value Matrix, interior walls also can act as structural elements of your building. If your design includes masonry or concrete interior walls, these walls can and should be used for structural purposes. Although this may seem to be common sense, it is not unusual to find a structural framing system with beams passing directly over walls which could serve the same purpose as the beam or act as intermediate support points, thereby reducing the size of beam required.

ALTERNATIVES

Cast-In-Place Concrete

Because of the labor intensiveness and one-time use of forming, the use of cost-in-place concrete interior walls is, in most case, the most expensive and time-consuming interior wall system.

Precast Concrete

As discussed in the structural section of this Value Matrix, precast concrete can be an economically competitive interior wall system for areas with high security and durability needs. (Refer to the earlier discussion of precast concrete in this section under Exterior Enclosures.)

Concrete Blocks

As discussed earlier in this section, concrete block in correctional facilities is very common. The price is usually equal to or less than other high security wall systems, such as cast-in-place concrete or precast concrete. (Refer to the full discussion of concrete blocks earlier in this section under Exterior Enclosures.)

Metal Framed Wall and Ceiling Systems

In areas of your facility where physical detainment or security are not necessary or the need for such systems is reduced, light gauge framing systems can offer a savings.

Key places to seek savings are non-secure areas such as administration, maintenance and support, such as kitchens and laundries. These areas can represent 10 to 30 percent of your facility and serve purposes similar to non-correctional commercial spaces. They should be designed accordingly.

Other areas in which to consider reduced levels of secure wall construction are those where inmates are supervised and contained within the overall security system of the building. These areas might include classrooms, medical clinics or inmate work areas.

Plaster

Plaster over metal studs or over a ceiling suspension system is often used in secure environments because its durability is greater than gypsum wall board. Plaster, however, is a very expensive, labor-intensive material which will cost as much (or more) as masonry or concrete, yet does not provide the durability of a concrete or masonry wall. Use of plaster as a ceiling system does offer durability advantages over materials such as drywall, but it still does not offer a non-destructible solution. If you need a very durable secure ceiling, exposed structural roofing or floor decks above are the best ways to accomplish this. This consideration should be made

during selection of structural systems and development of building sections during schematic design. The reason to consider this as early as possible is that the mechanical distribution systems are affected by the design of ceilings or plenum spaces above ceilings.

Gypsum Board Over Plywood, Wire Mesh Or Sheet Metal

Gypsum board or other inexpensive materials can be used in areas normally requiring more durability than gypsum board by using other common building materials over or behind the gypsum board. (The cost of gypsum board is one-fourth the cost of plaster.) Common materials to consider are: plywood (very impact resilient), wire mesh (increases time required to break through the wall) or light-gauge sheet metal (same qualify as wire mesh).

The use of a material like plywood over or behind gypsum board can make the surface extremely durable without really increasing the cost. Take care in specifying materials such as plywood to ensure compliance with non-combustible requirements of most correctional facilities.

Suspended Acoustical Tile

Many suspended ceiling systems on the market can cost even more than a plaster ceiling. A standard 2-by-4 or 2-by-2 exposed grid suspended acoustical ceiling is the most-economical ceiling system. (Of course, an exposed structure can be the least expensive solution.) Although suspended acoustical ceilings typically are not used in secure areas, they are an appropriate solution for non-secure areas. Once again, find out what is specified and how the cost of the selected system compares to other available ceilings. Concealed spline, special finishes, or special panels or grids all add to the cost, so select the proper solution for the appropriate use.

Interior Enclosures Matrix

		ALTERNATIVES							
		FOURED-IN-PLACE CONCRETE	PRECAST CONCRETE	SECURITY CONCRETE BLOCK WITH GROUT & REBAR	NON-SECURITY CONCRETE BLOCK	PLASTER OVER METAL STUDS	GYPSUM BOARD W/LATH OR PLYWOOD OVER METAL STUDS	GYPSUM BOARD OVER METAL STUDS	HOLLOW METAL W/GLAZING
CRITERIA	COST								
	LOW								
	MEDIUM								
	HIGH	●	●	●	●	●	●	●	●
	SECURITY								
	LOW/NONE								
	MEDIUM								
	HIGH	●	●	●	●	●	●	●	○
	DURABILITY								
	LOW								
	MEDIUM								
	HIGH	●	●	●	●	●	●	●	●
	SCHEDULE								
	SLOW	●		●	●	●	●	●	○
	MEDIUM		●						●
	FAST								

